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PROJECT MGA GEARBOX CONVERSION

Mike Brewer's MGA has now reached the rebuild stage. We caught up with the car at Rally Preparation Services to see the Moss Vitesse five-speed gearbox conversion being fitted.

By Gez Hughes

Work has been progressing rapidly on Project MGA and, in the very capable hands of Ben Harris at Rally Preparation Services, reassembly has begun in earnest on the freshly powder-coated chassis. In keeping with owner Mike Brewer's plans for the car, the MG is going to be upgraded in a few key areas.

Utilising the parts catalogue of project partner, Moss Europe, Mike had decided that a five-speed gearbox conversion was high on the wish list. The finished car will ultimately be used

on driving events and runs to raise funds for Mike's chosen charities, so driveability and reliability will be key. The Moss Vitesse conversion utilises the Mazda MX5 five-speed unit, with its legendary slick change and that additional gear for relaxed cruising.

To the same end, the MGA's engine will be replaced with a more powerful 'B' Series. The Vitesse conversion kit can be ordered for a range of configurations and as such, can be mated to the MGA 1500 and 1600, Twin Cam, MGB three- and five-bearing engines.

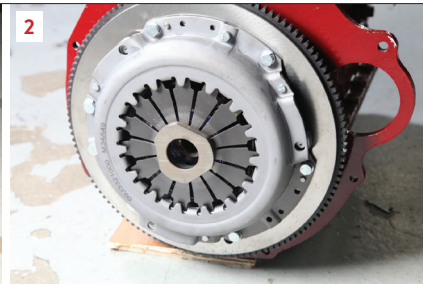
The kit is comprehensive and contains everything you need to carry

out the job, other than a handful of nuts and bolts. It includes a brand new Mazda five-speed gearbox assembled into custom casing and bell housing, which has been carefully designed to resemble the OE part. This is to preserve the original look in the engine bay, and it bolts directly onto the engine's back plate. A modern concentric clutch slave cylinder assembled with pipework comes ready fitted, as does the speedo drive.

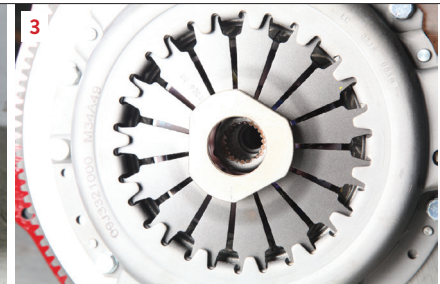
The clutch utilises the cover from the chosen engine, along with a Mazda OE clutch plate. In the case of Project >>



The MX5 gearbox supplied ready to fit, assembled into its custom casing and bell housing, with concentric slave cylinder ready fitted. It's even already filled with the correct gearbox oil.



The clutch assembly is a hybrid using the clutch cover appropriate to the engine with a Mazda driven plate. In our case, the cover is fitted using stainless spacers to accommodate the thicker driven plate and aligned with a Mazda tool which is supplied with the kit.



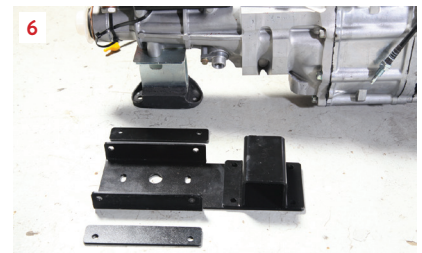
A new spigot bearing to suit the Mazda box is fitted into the end of the MGB engine's crank. It's lightly greased to aid smooth fitting of the gearbox.



As we're fitting the gearbox into an effectively bare chassis, we can pre-assemble the engine and box as a unit and fit from the front. If you're going to fit just the gearbox, it's necessary to go in through the car, meaning all interior trim, the floorboards and the transmission tunnel will need to be removed.



The concentric slave cylinder comes pre-fitted with all necessary pipework – a banjo ended pipe which goes to the master cylinder and a bleed pipe. These exit through the top of the bell housing and need to be handled with respect during the fitting process.



The new gearbox mount is cleverly designed to wrap around the cross member and has inbuilt adjustment for both fore and aft and side-to-side.



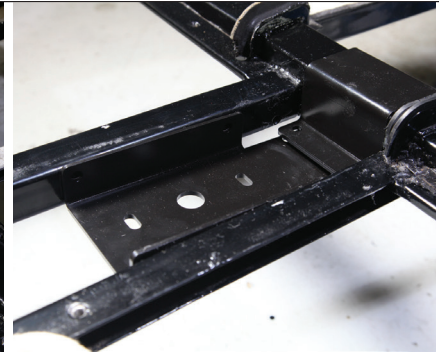
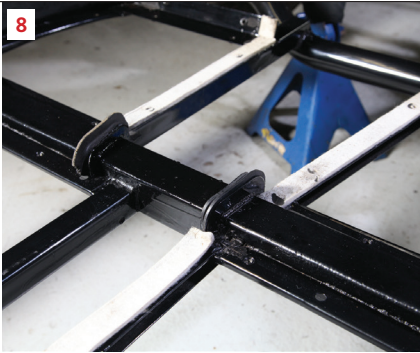
If you're working on a complete MGA, you will need to remove the propshaft before removing the transmission tunnel.

MGA's chosen setup, the cover is fitted with spacers to allow room for the heftier driven plate. Also included are the neat custom gearbox mounting, a bespoke propshaft and gear lever, plus the bits and pieces you may think you have to seek out elsewhere such as the

speedo cable. Even a Mazda OE gear knob is included along with all other hardware for installation, and the unit is even ready filled with oil.

As Mike's MGA is undergoing a ground-up rebuild, we were working without the restrictions of bodywork or

trim, which meant the gearbox could be mounted to the engine on the workshop floor and then the whole unit could be craned into place. This is also an option when working on a complete car, but will require great care when slotting the unit in through



The standard gearbox mount is welded to the cross member. This needs to be cut away with an angle grinder, all traces ground flat and then the area needs to be painted to prevent future corrosion.

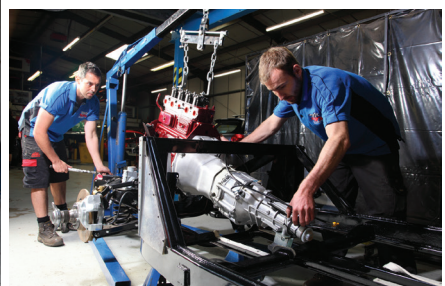
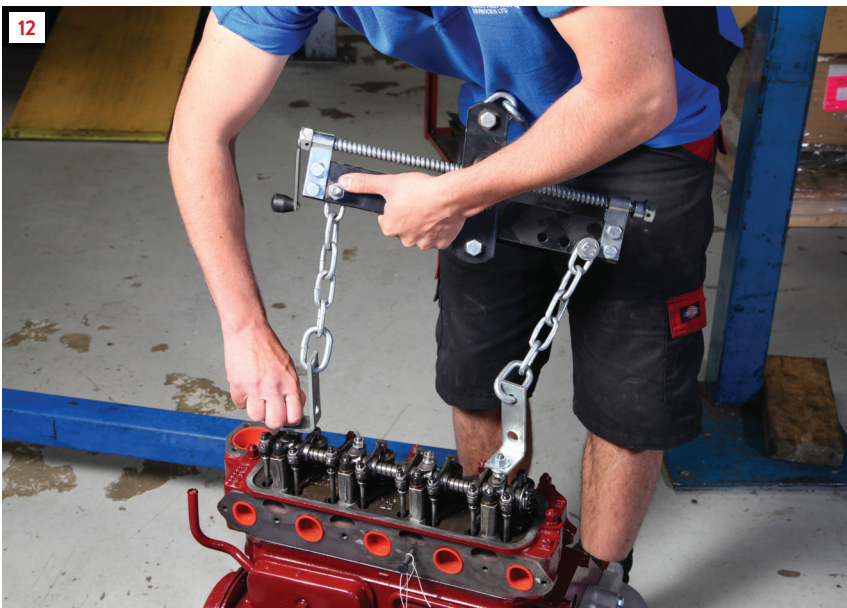
The new gearbox mount is secured by four nuts and bolts. It fits snugly between the longitudinal rails which require two holes drilling on each side.



The engine back plate should be cleaned carefully before the box is mated up. There are no dowels to aid location so an extra pair of hands will be very useful at this stage.



Once the gearbox slides home, fit the top two nuts and bolts to secure in place. Note that the length on the bolts vary around the bell housing.



Ben fits lifting eyes and a load leveller in preparation for hoisting the engine and box into the chassis. The leveller allows the unit to be tilted safely to guide it into place without catching on the cross members.

The engine/gearbox assembly is gently guided into place. If you're going to employ this method, it is a two-man job to prevent any damage to either the unit or the car. >>



14 With the gearbox supported on a trolley jack, the engine mounts are aligned and the fixing bolts slotted into place.



15 On the left-hand mount, the engine restrictor bracket is fitted. This prevents the engine moving forward should the mounts fail for any reason.



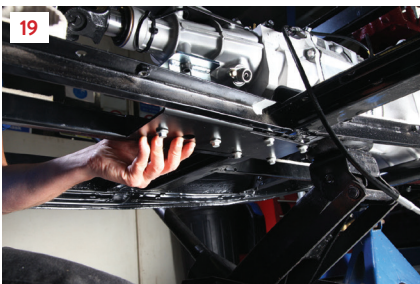
16 The propshaft yoke is lubricated with some gearbox oil and then slid into the gearbox...



17 ... and the propshaft rear flange is bolted up to the differential.



18 The front of the gearbox mount is secured to the cross member using four M8 nuts and bolts. The bottom of the mount should align with the longitudinal members of the chassis.



The rear rubber mount is fixed loosely to the bracket. They need to be no more than finger tight at this point as the final position will be determined once the transmission tunnel has been fixed back in place.

the engine bay, and will of course require the removal of the engine to start with.

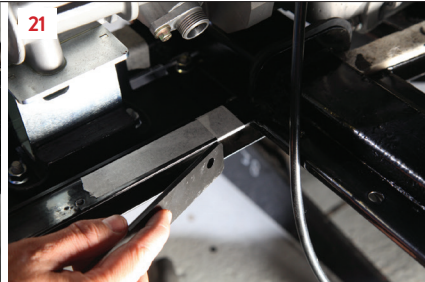
The second method is to fit the gearbox through the cabin. The seats, carpets, floorboards and the transmission tunnel will all need to be removed, but the engine can

then stay in situ. Moss recommends this method if the fitter is confident that the floorboards can be removed without damage as it allows greater access when removing the standard gearbox mounts, and when fitting and adjusting the new rear gearbox mount.

The kit is so well designed and thought out that Ben had little reason to call on the extensive resources at the Rally Preparation Services premises. A comprehensive tool kit, a decent jack and stands and an engine hoist should see you well equipped to complete the



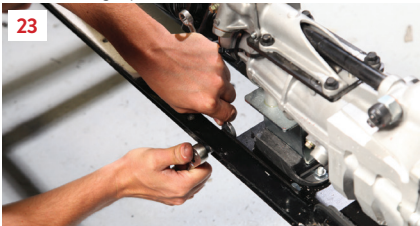
20 The bracket has side support plates which fit inside the c-section of the longitudinal members of the chassis. These have to line up exactly with the end of the bracket if the pre-drilled holes are to match. Ben uses some masking tape to mark the ends of the bracket.



21 The support brackets are then slotted into the c-section and carefully lined up with the edge of the masking tape.



22 With the support brackets held securely in place, the holes are marked and then drilled with a 9mm drill bit.



23 The gearbox mount is then secured with four M8 nuts and bolts.



24 The gearstick is slotted into place and secured with three M6 dome head cap screws. Ben checks that all gears can be selected easily.



25 The gearbox tunnel now has to be refitted to check the alignment of the gearbox. The propshaft has to be removed to facilitate this, and will need to be refitted once the tunnel is secured.



26 Moss have engineered in some float on the rear mounting to allow for variations in the gearbox tunnel. There needs to be 5-8mm on the right hand side, and around the same between the propshaft yoke and the left hand side.

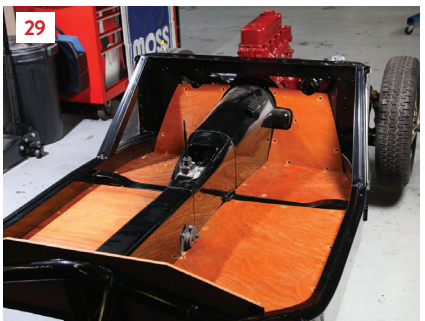


27 Ben gets a colleague to hold the gearbox in the right position while he tightens the two nuts and bolts securing the rear rubber mount to the bracket.



28 A hole needs to be cut in the right-hand side of the transmission tunnel to allow the speedo cable to pass through. A template is provided in the comprehensive fitting instructions.

task. Ben is an experienced and skilled restorer, and amongst many others, has restored several MGAs in the past, but he agreed the kit would present few challenges to the home mechanic. The trickiest part appeared to be measuring and accurately drilling the holes for the new gearbox mount, but with a little thought and time applied, Ben had this sorted quickly. ◯



29 The completed job. Once the trim is in place, there will be no sign of the modifications.

The Kit

Moss Europe Vitesse Five-Speed Mazda Gearbox Conversion For MGA

Five Speed Mazda Gearbox

Conversion Part Number:
TMK30726

Application: MGA converted to MGB 3 Main Bearing 3 Synchro
£2,925.00

Five Speed Mazda Gearbox

Conversion Part Number:
TMK30727

Application: MGA converted to MGB 5 Main Bearing 3 Synchro
£2,925.00

Five Speed Mazda Gearbox

Conversion Part Number:
TMK30728

Application: MGA converted to MGB 5 Main Bearing 4 Synchro
£2,925.00

www.moss-europe.co.uk